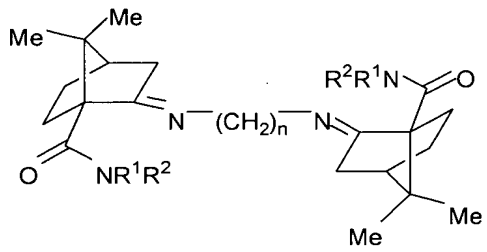
WHAT IS CLAIMED IS:

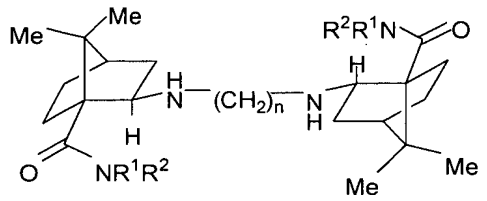
1.A chiral chelating agent having a formula (1) as follows and an enantiomeric isomer thereof:



(1)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

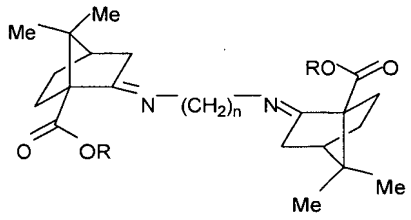
2.A chiral chelating agent having a formula (2) as follows and an enantiomeric isomer thereof:



(2)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

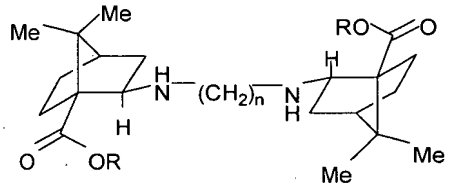
3.A chiral chelating agent having a formula (3) as follows and an enantiomeric isomer thereof:



(3)

wherein R represents H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

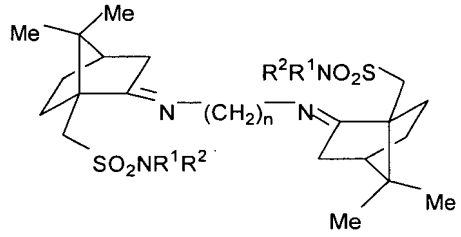
4.A chiral chelating agent having a formula (4) as follows and an enantiomeric isomer thereof:



(4)

wherein R represents H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

5.A chiral chelating agent having a formula (5) as follows and an enantiomeric isomer thereof:

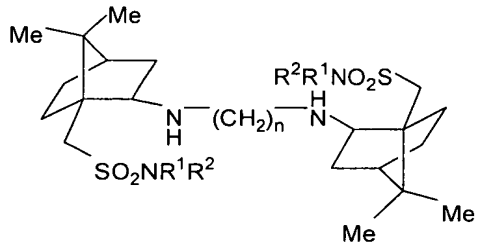


(5)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic

group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

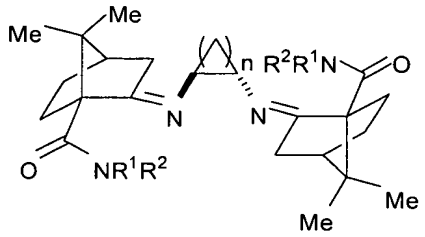
6.A chiral chelating agent having a formula (6) as follows and an enantiomeric isomer thereof:



(6)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

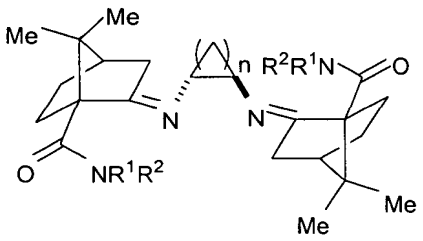
7.A chiral chelating agent having a formula (7) as follows and an enantiomeric isomer thereof:



(7)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

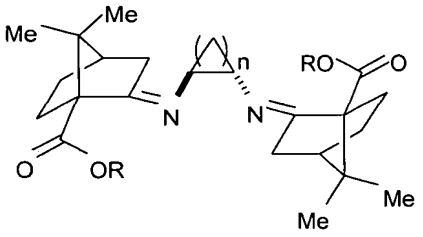
8.A chiral chelating agent having a formula (8) as follows and an enantiomeric isomer thereof:



(8)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

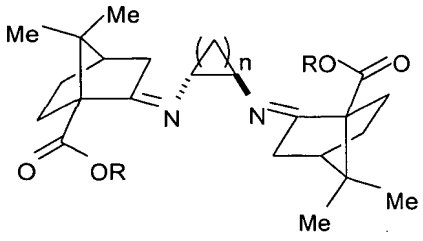
9.A chiral chelating agent having a formula (9) as follows and an enantiomeric isomer thereof:



(9)

wherein R represents H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

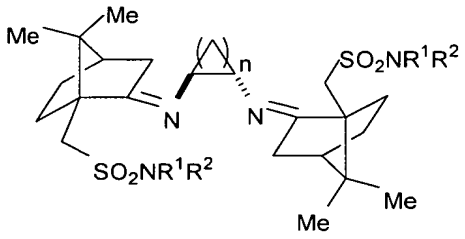
10.A chiral chelating agent having a formula (10) as follows and an enantiomeric isomer thereof:



(10)

wherein R represents H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

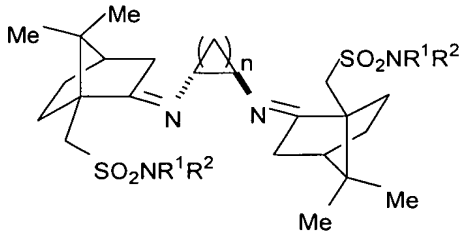
11.A chiral chelating agent having a formula (11) as follows and an enantiomeric isomer thereof:



(11)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

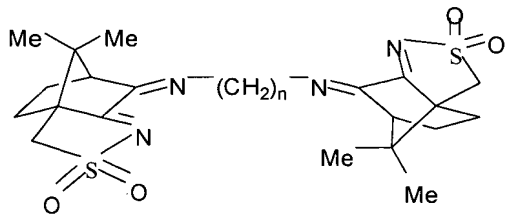
12.A chiral chelating agent having a formula (12) as follows and an enantiomeric isomer thereof:



(12)

wherein R^1 and R^2 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, or a naphthyl or naphthyl-derived group, and n is an integer between 0 and 4.

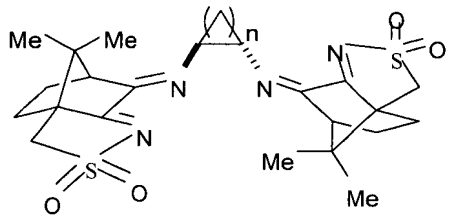
13.A chiral chelating agent having a formula (13) as follows and an enantiomeric isomer thereof:



(13)

wherein n is an integer between 0 and 4.

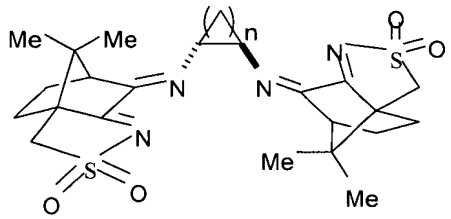
14.A chiral chelating agent having a formula (14) as follows and an enantiomeric isomer thereof:



(14)

wherein n is an integer between 0 and 4.

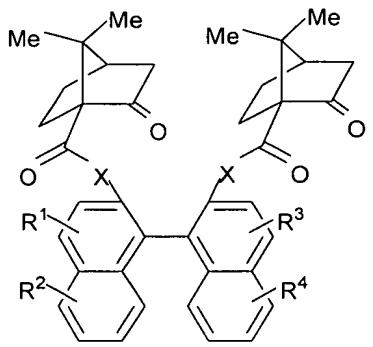
15.A chiral chelating agent having a formula (15) as follows and an enantiomeric isomer thereof:



(15)

wherein n is an integer between 0 and 4.

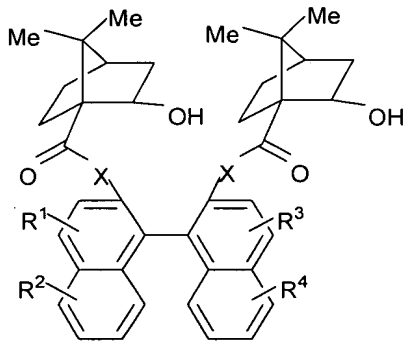
16.A chiral chelating agent having a formula (16) as follows and an diastereomeric or an enantiomeric isomer thereof:



(16)

wherein X represents an oxygen atom or a nitrogen atom; R^1, R^2 R^3 and R^4 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, a naphthyl or naphthyl-derived group or the above groups substituted with at least a halogen.

17.A chiral chelating agent having a formula (17) as follows and an diastereomeric or an enantiomeric isomer thereof:



(17)

wherein X represents an oxygen atom or a nitrogen atom; R^1, R^2 R^3 and R^4 represent H, methyl, ethyl, a primary, secondary or tertiary straight, branched or cyclic alkyl group having 3-7 carbon atoms, a heterocyclic or aromatic group, an aromatic group substituted at the 2-, 3- or 4-position, an aromatic-like group, a naphthyl or naphthyl-derived group or the above groups substituted with at least a halogen.

18.A chiral catalyst formed from the chiral chelating agent of any one of claims 1 to 17 and a metal.

19.The chiral catalyst of claim 18, wherein the metal comprises an alkali metal, an alkaline earth metal or a transition metal.

20.The chiral catalyst of claim 19, wherein the transition metal comprises a lanthanide metal.

21.The chiral catalyst of claim 20, wherein the lanthanide metal comprises lanthanum (La) or ytterbium (Yb).

22.The chiral catalyst of claim 18, which is used in a Baylis-Hillman reaction.

23.The chiral catalyst of claim 18, which is used in a chiral alkylation, a chiral reduction, a chiral cyclization including a [2+2], a [3+2], a [4+2] or a [2+2+2] cyclization, a chiral hydrogenation, a chiral epoxidation, a chiral cyclization of propane, a chiral aziridination, a alkylation, a chiral dialkylation, a chiral hyroxyamination, a chiral amination, an Aldol reaction or a Michael addition reaction.